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# **Intranodal Palisaded Myofibroblastoma Masquerading as N2 Non Small Cell Lung Carcinoma**

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## **Abstract**

Intranodal palisaded myofibroblastoma is a rare and benign tumour that usually presents in the inguinal region. We report a case of a 68 year-old woman who presented with a right paratracheal mass and a right upper lobe non-small cell lung carcinoma initially staged T1b N2 M0. Following, mediastinal staging, the right paratracheal mass was found to be an intranodal palisaded myofibroblastoma which had caused erroneous upstaging of the lung carcinoma to N2 disease. This had the potential of leading to suboptimal treatment of the primary lung carcinoma if formal mediastinal staging had not been performed. To the best of our knowledge, this is the first ever report in the English literature of an intranodal palisaded myofibroblastoma occurring concurrently with a lung cancer. This case highlights the importance of mediastinal staging in lung cancer and Mediastinoscopy remains the gold standard.

Word Count: 139

## **Introduction**

Intranodal palisaded myofibroblastoma (IPM) is a rare, benign, mesenchymal tumour of modified smooth muscle cells or myofibroblasts. It normally presents in middle aged men as a painless, slow growing inguinal mass<sup>1</sup> but IPM has, on extremely rare occasions, been reported in other sites including the submandibular region and retroperitoneum<sup>2-4</sup>. We report a case of IPM in the paratracheal zone of a 68-year-old female, which presented concurrently with a non-small cell carcinoma, causing erroneous upstaging to N2 disease. To our knowledge, this is the first report of IPM in the mediastinum presenting concurrently with a lung carcinoma.

## **Case Report**

A 68-year-old woman, who was an ex-smoker with no other significant co-morbidities, presented with a 2-month history of chronic cough. Chest plain film radiography was abnormal, thus a CT scan was arranged which showed a right upper lobe nodule and a right paratracheal mass. Subsequent PET-CT revealed a right 3.6cm x 5.9cm paratracheal mass which was FDG avid (SUV 6.2g/ml) (figure 1A) with an area of crescentic low grade FDG uptake (SUV 2.7g/ml) in the right upper lobe (figure 1B). The patient was discussed in the lung cancer multidisciplinary team meeting with the provisional staging of T1b N2 M0 (Stage IIIa) non small cell lung carcinoma. An endobronchial ultrasound guided fine needle aspiration was then performed to confirm N2 status but no definite malignant cells were seen; the fine needle aspirate only contained inflammatory cells and fragments of debris, the area of clinical interest probably had not been sampled. Therefore, a Mediastinoscopy was arranged and the R4 lymph node sampled. Histology showed tissue with the appearances of a benign soft tissue tumour showing myofibroblastic differentiation consistent with intranodal palisaded myofibroblastoma. The pathology opinion at the time was that this was unlikely to be related to the radiological mass within the right upper lobe and that the patient should be referred for a formal lung resection.

The operation was performed using a VATS posterior approach as previously described<sup>5</sup>. The right upper lobe lesion was identified and removed as a wedge resection and sent for frozen section.

Meanwhile, the mediastinal pleura overlying the paratracheal mass (figure 2) was opened in a triangular fashion above the azygous vein and the mass dissected out en-bloc and removed from the chest in an endobag. The frozen section result confirmed a non-small-cell lung carcinoma and therefore we proceeded to a right upper lobectomy. The hilar anatomy was unusual: the upper lobe bronchus had a very low bifurcation; the lower lobe apical segment vein drained into the posterior segment vein of the upper lobe rather than the inferior pulmonary vein and the all arterial branches to the upper lobe arose from a common anterior trunk. The specimen was removed and lymph nodes dissected from the subcarinal and paraoesophageal areas. An extrapleural catheter and chest drain were placed, the lung inflated and wounds closed.

### **Histopathology**

The final pathological diagnosis and staging of the right upper node lesion was that of moderately differentiated adenocarcinoma pT1b N0.

Sections from the right paratracheal mass (figure 3) showed a circumscribed encapsulated spindle cell neoplasm. This was composed of bland spindle cells showing a well developed palisaded morphological pattern with amianthoid fibres. There was no significant cytological atypia and no mitotic figures were identified. Extravasation of red blood cells was present within the neoplasm and a cuff of residual lymphoid tissue surrounded the tumour. Immunohistochemistry confirmed the spindle cells were of myofibroblastic origin (smooth muscle actin positive, calponin positive, S100 negative).

### **Comment**

This is a rare case where a mediastinal intranodal palisaded myofibroblastoma, interpreted radiologically as metastatic carcinoma, had caused erroneous upstaging (stage IIIA rather stage IA) in a patient with NSCLC. The patient was clinically thought to have bulky single zone N2 disease. This case highlights the importance of accurate mediastinal staging of all lung cancer patients as recommended by the European Society of Thoracic Surgeons guidelines and mediastinoscopy remains

the gold standard technique<sup>6</sup>; especially in this case as an endobronchial ultrasound guided fine needle aspirate had essentially failed to biopsy the target. To the best of our knowledge this is the first described report of IPM presenting concurrently with NSCLC and of IPM in an unusual location – the paratracheal area.

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## Figure Legend

- 1A. PET-CT scan showing right paratracheal mass PET avid with SUV 6.2g/ml.
- 1B. PET-CT scan showing right upper lobe mass PET avid with SUV 2.7g/ml.
- 2. Intra-operative image showing right sided paratracheal mass.
- 3. Intranodal Palisaded Myofibroblastoma- histology section stained with Haematoxylin and Eosin at x20 magnification.